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(I) The Political Economy of Overvaluation  
(II) Election Outcomes and the  
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by  
Frederick van der Ploeg

Reprinted from (I) The Economic Journal,  
Vol. 99, No. 397, 1989; (II) European Journal  
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## THE POLITICAL ECONOMY OF OVERVALUATION\*

*Frederick van der Ploeg*

Most of the literature on political business cycles (e.g. Nordhaus, 1975; MacRae, 1977; van der Ploeg, 1984) assumes that the incumbent political party attempts to secure re-election, by maximising the expected number of votes cast in its favour at the forthcoming election, and to exploit lags due to adaptive expectations. The government can then fool the electorate by judiciously depressing output in the early part of its term in office, in order to force down the expected rate of inflation, and to create a boom, without too many adverse inflationary consequences, towards election eve in order to gain the sympathy of the electorate. Such political business cycles rely on a naive electorate and cannot occur in New Classical economies with market clearing and rational expectations, because then the electorate would see through the government's vote-maximising strategy (e.g. McCallum, 1978; Minford and Peel, 1982). If the private sector has rational expectations and prices or wages are sticky, this is observationally equivalent to adaptive expectations and flexible prices and wages (e.g. Sargent, 1976) but nevertheless the electorate would see through a vote-maximising strategy and thus no political business cycle would occur.

In any case, it is not clear that the empirical evidence supports this view of the political business cycle (e.g. Frey, 1978). One reason for this is that it may not be realistic to assume that output can be changed instantaneously whilst inflation can, through expectations, only be influenced in a gradual fashion. In an open economy it is much easier and faster to affect real income and consumers' prices through the exchange rate than it is to have an effect on aggregate demand, output and employment. An appreciation of the exchange rate immediately cuts import prices and consumers' prices and therefore immediately boosts real income. This, combined with the reduction in the real value of imports, depresses aggregate demand, but over time standard neoclassical substitution effects ensure that the volume of exports decreases, the volume of imports decreases and therefore aggregate demand and output increase. The above argument is based on the J-curve effect in the balance of trade, for which there is ample empirical evidence (e.g. Diaz-Alejandro, 1966; Magee, 1973). This note explores the implications of the J-curve effect for the political business cycle in a small open economy, as suggested by van der Ploeg (1984) and Dornbusch (1987, Section IV). Section I sets up the model of the economy. Section II derives the development of the exchange rate, real income and output over the course of the political business cycle. Section III concludes with an interpretation and qualification of the results.

\* The author is grateful to an associate editor and an anonymous referee for their useful comments.



## I. A MODEL OF A SMALL OPEN ECONOMY WITH A J-CURVE

We will assume a very simple macroeconomic model:

$$y = \bar{\delta}c + \eta(p + y - p_c) - \bar{\mu}(p^* + e - p), \bar{\delta} > \alpha\eta + \bar{\mu} > \bar{\mu} > 0, \eta < 1 \quad (1)$$

$$\dot{c} = \psi(p^* + e - p - c), \psi > 0 \quad (2)$$

$$p_c = (1 - \alpha)p + \alpha(p^* + e), 0 < \alpha < 1 \quad (3)$$

$$p = w = \bar{w} \quad (4)$$

where  $y$ ,  $c$ ,  $p$ ,  $p^*$ ,  $e$ ,  $p_c$ , and  $w$  denote real output, a competitiveness index, the home price level, the foreign price level, the nominal exchange rate (the price of one unit of foreign exchange), the consumers' price index and the nominal wage, respectively. All variables are expressed as logarithmic deviations from their equilibrium values. There is imperfect substitution between home and foreign goods. Each country is wholly specialised in the production of its exportable. There is nominal wage rigidity, so that employment and output are determined by aggregate demand. Equation (1) gives aggregate demand as an increasing function of competitiveness and real income and a decreasing function of the real exchange rate. In the short run an appreciation of the real exchange rate increases real income, reduces the value of imports, and therefore increases aggregate demand. Equation (2) gives the J-curve and shows that the volume of net exports falls gradually after an appreciation of the real exchange rate. It is assumed that an appreciation of the real exchange rate reduces long-run aggregate demand, so that something stronger than the Marshall-Lerner condition ( $\bar{\delta} > \bar{\mu}$ ) is assumed ( $\bar{\delta} > \alpha\eta + \bar{\mu}$ ). For simplicity, it is assumed that aggregate demand does not depend on the real interest rate.<sup>1</sup> Equation (3) gives an expression for the consumers' price index as a weighted average of home and foreign prices, which holds exactly for Cobb-Douglas preferences. Equation (4) shows that prices are a constant mark-up on wages and that there is nominal wage rigidity. For simplicity, we assume that  $\bar{w} = p^*$ . The reduced form then becomes:

$$y = \delta c - \mu e, \delta \equiv \bar{\delta}/(1 - \eta) > \mu \equiv (\alpha\eta + \bar{\mu})/(1 - \eta) > 0 \quad (5)$$

$$\dot{c} = \psi(e - c), c(0) = c_0. \quad (6)$$

The exchange rate,  $e$ , will be treated as an intermediate policy instrument, which is ultimately determined by monetary and fiscal policy.

## II. THE POLITICAL BUSINESS CYCLE

It is assumed that the incumbent political party chooses its exchange rate policy to maximise votes on election eve. When popularity is an increasing

<sup>1</sup> Politically induced swings in a small open economy with real exchange rate overshooting and a term structure of interest rates, but without a J-curve, are discussed in van der Ploeg (1987).

function of the outcomes of output (or employment) and the real consumers' wage over the election cycle, the problem of the government is:

$$\text{Max}_c \int_0^T \{y(s) - \frac{1}{2}\bar{\theta}[w(s) - p_c(s) - \omega]^2\} \exp(\rho s) ds, \quad \rho, \bar{\theta}, \omega > 0 \quad (7)$$

where  $\bar{\theta}, \omega, \rho$  and  $T$  denote the relative weight the incumbent government attaches to real income *vis-à-vis* real activity, the desired level of real income, the rate of memory loss of the electorate and the length of an election period, respectively. The parameter  $\rho$  is a backward-looking (rather than a forward-looking) rate of discount and corresponds to the rate at which past performance is forgotten. It is assumed that  $\rho < \psi$ . The reduced-form decision problem of the incumbent political party is:

$$\text{Max}_c \int_0^T \{\delta c(s) - \mu e(s) - \frac{1}{2}\theta[e(s) - \bar{e}]^2\} \exp(\rho s) ds, \quad \theta \equiv \bar{\theta}\alpha^2 > 0, \quad (8)$$

subject to (6), where  $\bar{e} \equiv -\omega/\alpha < 0$  denotes the desired value of the nominal exchange rate.

The first-order conditions for the government are:

$$\partial H / \partial e = -\mu - \theta(e - \bar{e}) + \psi x = 0 \quad (9)$$

$$\dot{x} = -\rho x - (\partial H / \partial c) = (\psi - \rho)x - \delta, x(T) = 0 \quad (10)$$

and (6), where the Hamiltonian is defined as  $H \equiv \delta c - \mu e - \frac{1}{2}\theta(e - \bar{e})^2 + x\psi(e - c)$  and  $x$  denotes the shadowprice associated with competitiveness. When we solve (9) for  $x$  and substitute the result into (10), one obtains

$$\dot{e} = [(\psi - \rho)/\theta] [\mu + \theta(e - \bar{e})] - (\delta\psi/\theta), e(T) = \bar{e} - (\mu/\theta). \quad (11)$$

Backward integration of (11) yields

$$e(t) = \bar{e} - (\mu/\theta) + [\delta\psi/(\psi - \rho)\theta] \{1 - \exp[(\psi - \rho)(t - T)]\}. \quad (12)$$

Upon substitution of (12) into (6) and forward integration, one obtains

$$c(t) = c_0 \exp(-\psi t) + \{\bar{e} - (\mu/\theta) + [\delta\psi/(\psi - \rho)\theta]\} [1 - \exp(-\psi t)] \\ [\psi^2\delta/(2\psi - \rho)(\psi - \rho)\theta] \exp[(\psi - \rho)(t - T)] \{1 - \exp[-(2\psi - \rho)T]\}. \quad (13)$$

The political business cycle settles down to an equilibrium cycle, because the stability condition is satisfied:

$$0 < \partial c[(k+1)T]/\partial c(kT) = \exp(-\psi T) < 1, k = 0, 1, 2, \dots \quad (14)$$

The equilibrium (or stationary) political business cycle satisfies

$$c_0 = c(T) \equiv \bar{e} - (\mu/\theta) + [\delta\psi/(\psi - \rho)\theta] \{1 - [\psi/(2\psi - \rho)] \\ \{1 - \exp[-(2\psi - \rho)T]\} [1 - \exp(-\psi T)]^{-1}\} \quad (15)$$

so that (13) becomes

$$c(t) = \bar{e} - (\mu/\theta) + [\delta\psi/(\psi - \rho)\theta] \{1 - [\psi/(2\psi - \rho)] \\ \{\Gamma \exp(-\psi t) + \exp[(\psi - \rho)(t - T)]\}\} \quad (13')$$

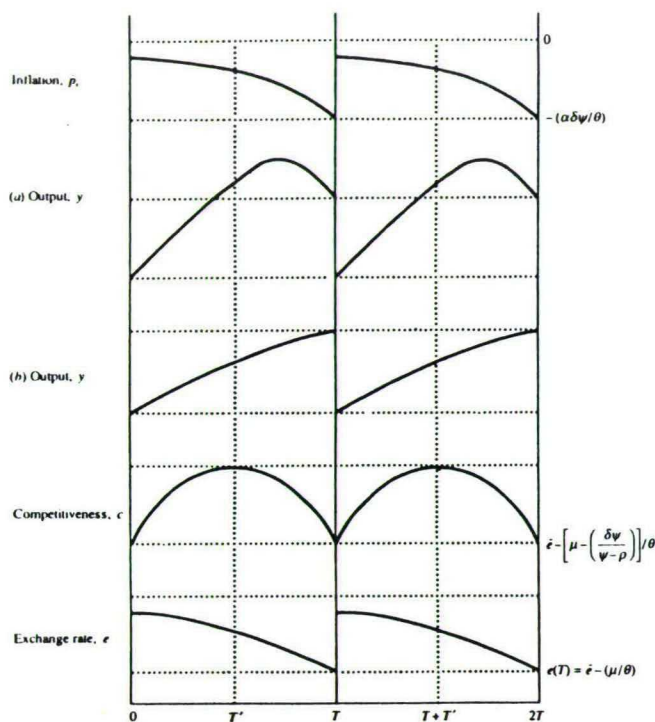


Fig. 1. Political business cycle in a small open economy.

where

$$0 < \Gamma \equiv \{1 - \exp[-(\psi - \rho)T]\} / \{1 - \exp(-\psi T)\} \leq 1.$$

Substitution of (12) and (13') into (5) gives

$$\begin{aligned} y(t) = & (\delta - \mu) [\bar{e} - (\mu/\theta) + \delta\psi/(2\psi - \rho)\theta] \\ & + \mu[\delta\psi/(\psi - \rho)\theta] \exp[(\psi - \rho)(t - T)] \\ & - [\delta^2\psi^2/(\psi - \rho)(2\psi - \rho)\theta] \{\Gamma \exp(-\psi t) + \exp[(\psi - \rho)(t - T)]\}. \end{aligned} \quad (16)$$

Finally, inflation in the consumers' price index is given by

$$\dot{p}_c(t) = \alpha \dot{e}(t) = -(\alpha\delta\psi/\theta) \exp[(\psi - \rho)(t - T)] \leq 0. \quad (17)$$

Fig. 1 presents the time paths of the exchange rate, competitiveness, output and inflation during the course of two election periods. The exchange rate monotonically appreciates during the length of each election period and on election morning there is a jump depreciation of the exchange rate. The J-curve is driven by competitiveness,  $c$ , which in the early part of the election period ( $0 < t < T'$ ) improves and in the latter part of the election period ( $T' < t < T$ )



worsens.<sup>2</sup> Since in the early part of the election period ( $0 < t < T'$ ) competitiveness improves and the exchange rate appreciates, it is clear that both the volume of net exports and the value of net exports increase as well as real income increases. Hence, in the early part of the election period output and employment increase. In fact, output continues to increase for at least part of the time of the second part of the election period (as  $\dot{y}(T') = -\mu\dot{\epsilon}(T') > 0$ ). Towards election eve output can decrease (see (a)) or increase (see (b)), which depends on

$$\dot{y}(T) = (\mu\delta\psi/\theta) - [\delta^2\psi^2/(2\psi - \rho)\theta] \{1 - [\psi\Gamma/(\psi - \rho)] \exp(-\psi T)\} \quad (18)$$

being negative or positive, respectively. Hence, output is more likely to decrease after a gradual increase (case (a)) when the election period is long, when the rate of memory loss is high and when the impact effect of the exchange rate on output,  $\mu$ , is small and of competitiveness on output,  $\delta$ , is large. Since the exchange rate depreciates on election morning, real income, net exports and therefore output fall at that time ( $y(0) < y(T)$ ). Inflation in the consumers' price index gradually falls over the election period and on election morning inflation jumps upwards.

### III. CONCLUDING REMARKS

The incumbent political party chooses its exchange rate policy to secure re-election, i.e. to maximise votes at the forthcoming election.<sup>3</sup> Popularity at the polls depends on the government's track record on achieving high levels of output and real consumers' wages. An appreciation of the exchange rate immediately cuts inflation, raises the value in domestic prices of net exports and therefore boosts real income and aggregate demand, but it takes time for the neoclassical substitution effects to build up and therefore in the long run net exports deteriorate and output falls. The consequences of this J-curve effect in the balance of trade for the political business cycle are as follows. Immediately upon entering office a government depreciates the exchange rate, which can be viewed as an 'investment' in improving competitiveness, and subsequently it gradually appreciates the exchange rate. A policy of real appreciation towards election eve is very sensible from a political point of view, because it quickly cuts inflation, boosts real income and therefore increases votes, whilst the undesirable effects on net exports, output and employment are typically felt after the election. Dornbusch (1987) already suggested that a policy of overvaluation of the exchange rate is one of the best tricks in the bag and that

<sup>2</sup> The turn-over occurs halfway through the election period when there is no memory loss ( $T' = \frac{1}{2}T$  for  $\rho = 0$ ). When there is memory loss, it occurs less than halfway through the election period ( $T' < \frac{1}{2}T$  for  $\rho > 0$ ).

<sup>3</sup> When governments are less myopic, they maximise the uninterrupted length in office (Frey and Ramser, 1986). When the electorate has no memory, this leads to a social welfare optimum with the discount rate equal to the probability of not being re-elected. A government sure of re-election does not value the current election more than future elections and thus pursues a golden rule of indifference between generations ( $\rho = 0$ ,  $\epsilon(t) = t + (\delta - \mu)/\theta$ ). Although such far-sighted behaviour may be realistic for the Swiss system of referenda, it does not seem a realistic feature of most Western democracies.

it gave short-term political support for Pinochet in Chile, Martinez de Hoz in Argentina, Thatcher in the United Kingdom and Reagan in the United States. In contrast to previous views of the political business cycle, it is possible for output to fall just before election eve. The magnitude of this political business cycle ( $\delta\psi/(\psi-\rho)\theta$ ), i.e. the extent to which the government is prepared to overvalue the exchange rate, increases when the relative weight the electorate attaches to the real consumers' wage *vis-à-vis* output ( $\theta$ ) is small, when the electorate's rate of memory loss ( $\rho$ ) is high, when the adverse effects of overvaluation on net exports and aggregate demand take longer to come through (i.e.  $\psi$  is small), and when the J-curve effect ( $\delta$ ) is large. In the extreme case when there is complete memory loss ( $\rho \rightarrow \infty$ ) or no J-curve effect ( $\psi = 0$ ), the political business cycle disappears. However, the empirical evidence suggests that political business cycles based on overvaluation of the exchange rate as election eve approaches are an important feature of Western democracies.

An appreciation of the real exchange rate improves the current account in the short run, as the increase in real income leads to an increase in savings out of a given level of producers' income (the Harberger-Laursen-Metzler effect), and deteriorates the current account in the long run, as the volume of net exports responds to the real exchange rate. Hence, if the electorate also cares about the current account (or the increase in the nation's net wealth), the government has an added incentive to overvalue the exchange rate towards election eve.

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## ELECTION OUTCOMES AND THE STOCKMARKET

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A macroeconomic model with sluggish labour markets and efficient financial markets is formulated. The consequences of uncertainty about election outcomes for share prices, interest rates, output and employment in the pre-election period are analysed.

Also, the nature of the jumps in the stockmarket and the real economy on the morning after the election are analysed. This provides an alternative to the conventional theory of political business cycles and is able to explain large swings in the economy when election 'news' becomes known. It is shown that the stockmarket crashes (booms) when a Labour administration is elected into office with the promise that it will engage in a fiscal (monetary) expansion.

### 1. Introduction

The conventional literature on political business cycles [e.g., Nordhaus (1975); McRae (1977); van der Ploeg (1984)] rejects the view of a government as a benevolent dictator interested in maximising social welfare. Instead, the incumbent political party is interested in its short-run survival and attempts to secure re-election by maximising the expected number of votes cast in its favour on election eve. Implicit is the hypothesis that votes on election eve depend on the track-record on economic performance over the last period of government [e.g., Hibbs (1982); Borooah and van der Ploeg (1983)]. In doing this the government attempts to maximise votes by exploiting lags due to adaptive expectations. Hence, the government fools the electorate by judiciously depressing output in the early part of its term in office, in order to force down the expected rate of inflation, and by engineering a boom, without too many adverse consequences for inflation, towards election eve and thereby gains the sympathy of the electorate. Such political business cycles rely on a myopic electorate and are not feasible under rational expectations [McCallum (1978); Minford and Peel (1982)], because then the electorate would see through the government's vote-maximising strategy. However, it is quite possible for governments to exploit other lags in the economy in order to obtain short-run political gains. For example, in open

\*The author is grateful to the referees for their constructive comments.



economy macroeconomics the J-curve is a well-established phenomenon. It means that an appreciation of the currency leads to an immediate reduction in import and consumers' prices and therefore to an immediate boost in real income whilst the adverse effects on the volume of net exports, aggregate demand and employment only occur after some time. This then gives the incumbent political party an incentive to appreciate the currency, boost real income and gain popularity towards election eve and lumber the next administration with the adverse consequences for net exports and unemployment [Dornbusch (1987); van der Ploeg (1987b)]. However, political business cycles of the type discussed above may disappear when governments are subjected to continuous elections (perhaps, as in the Swiss system of referendums) and are interested in long-run survival and maximise the expected length in office. In that case, there are no cycles and a social welfare optimum is reached with the social rate of discount equal to the probability of not being re-elected [Frey and Ramser (1976)].

It is quite clear that the conventional view of the political business cycle is somewhat naive as it is not concerned with the effects of uncertainty about future political outcomes on the current state of the economy. The reason for this is that the conventional view assumes that the private sector is backward-looking and does not anticipate future events. This is a big shortcoming, because large jumps in asset prices (i.e., share prices, consol prices and exchange rates) often occur on the morning after the election once the votes have been counted. The following story might explain what might occur. Imagine a situation with an incumbent Conservative political party and suppose there is a probability that at the next election this administration is replaced by a Labour party which promises a greater emphasis on job creation and expansion of public expenditure programmes when elected into office. The anticipation of a possible fiscal expansion can have dramatic consequences for the pre-election outcomes of the economy. For example, the anticipation of future budget deficits and higher short-term interest rates implies a rise in the current long-run real interest rate and an appreciation of the currency. Hence, the anticipation of a fiscal expansion aggravates the recession caused by a Conservative administration in the pre-election period. This may lead the incumbent Conservative party to 'colour' its ideology and implement a more reflationary package than in the absence of the possibility of such a political take-over [van der Ploeg (1987a)]. Because the election outcome is not known until all votes have been counted, on the morning after the election the economy jumps onto a new trajectory in order to take account of the election 'news'. It is clear therefore that future political uncertainty, combined with forward-looking behaviour of the private sector, can cause major swings in the state of the economy. Hence, rational expectations and disequilibrium in labour markets enhance the scope for political-economic interactions.

The objective of this paper is to discuss the nature of such political-economic fluctuations and, in particular, to analyse the effects of election outcomes on the stockmarket and the real economy. Section 2 describes a rational expectations model with sluggish output and labour markets and efficient financial markets. The implementation and announcement effects and the subsequent development of the economy caused by a surprise fiscal and monetary expansion are discussed in Section 3. Section 4 discusses the swings in the economy caused by pre-announced expansions and by political uncertainty. In particular, the consequences of having a possible future Keynesian administration, committed to either a fiscal or a monetary expansion, installed at the next election, and the effects of the probability of re-election are discussed. Section 5 concludes the paper.

## 2. Sluggish labour markets and efficient financial markets

A Keynesian model of a closed economy with an efficient stockmarket will be used. It can be summarised by:

$$y = \alpha q + f, \quad \alpha \geq 0 \quad (1)$$

$$m - p = ky - \lambda^{-1}i, \quad k, \lambda \geq 0 \quad (2)$$

$$\dot{p} = \dot{w} = \phi(y - \bar{y}) = \phi y, \quad 0 \leq \phi < k\lambda \quad (3)$$

$$\dot{q}^e + d = i - \dot{p}^e \equiv r \quad (4)$$

$$d = \gamma(y - q), \quad 0 \leq \gamma < 1, \quad \text{where} \quad (5)$$

$y$  – logarithm of real output (demand)

$\bar{y}$  – logarithm of the full-employment level of real output ( $= 0$ )

$f$  – fiscal shock

$d$  – dividend ratio (ratio of profits to the value of the stockmarket)

$p$  – logarithm of the price level

$w$  – logarithm of the nominal wage rate

$i$  – nominal interest rate

$r$  – real interest rate

$q$  – logarithm of the value of the stockmarket

$m$  – logarithm of the nominal supply of money.

All variables are expressed as deviations from their equilibrium levels. The model is related to the one discussed by Blanchard (1981). [An intertemporal classical full-employment model of saving and investment can be found in Abel and Blanchard (1983)].



Eq. (1) is a reduced form of the IS-curve and shows that the demand for goods increases when the stockmarket booms and when the government engages in a fiscal expansion (e.g., increase in government spending or cut in taxes). The stockmarket influences aggregate demand through the demand for investment goods and through the effect of wealth on consumption. Eq. (2) is the LM-curve for money market equilibrium. The demand for money depends positively upon real income and negatively upon the opportunity cost of holding real money balances (i.e., the nominal interest rate). There is no commercial banking system, so that  $m$  corresponds to high-powered money. As far as aggregate supply is concerned, eq. (3) shows that firms set prices as a mark-up on wages and that workers press for higher wages when the reserve army of unemployed is small. Efficient and risk-neutral arbitrage in financial markets ensures that (4) holds, that is arbitrage continues until the real return on bonds equals the real return on stocks and shares where the latter consists of dividends ( $d$ ) and capital gains ( $\dot{q}^e$ ). Finally, eq. (5) shows that the ratio of dividends (or profits) to the value of the stockmarket is an increasing function of the ratio of output to the value of the stockmarket. It is derived under the assumption that profits are a proportion of total income and  $\gamma$  refers to the long-run ratio of profits to the value of the stockmarket. Stockprices are forward-looking variables, which depend upon rational expectations of future events. This can be seen from forward integration of (4) and (5) (and imposing the appropriate transversality condition):

$$q(t) = \int_t^{\infty} [d(s) - r(s)] ds = \int_t^{\infty} (\gamma y(s) - r(s)) \exp(-\gamma(s-t)) ds, \quad (6)$$

which gives stockprices as the discounted stream of future dividends.<sup>1</sup>

The reduced form can be expressed in terms of the policy instruments,  $f$  and  $m$ , the backward-looking state variable,  $p$ , and the forward-looking state variable,  $q$ : (1),

$$\dot{i} = \lambda(k(\alpha q + f) - m + p) \quad (7)$$

$$r = k'(\alpha q + f) - \lambda(m - p) \quad (8)$$

$$\dot{d} = -\gamma(1 - \alpha)q + \gamma f \quad (9)$$

$$\dot{p} = \dot{w} = \phi(\alpha q + f) \quad \text{and} \quad (10)$$

$$\dot{q}^e = -\lambda(m - p) + (k' - \gamma)f + (k'\alpha + \gamma(1 - \alpha))q, \quad (11)$$

<sup>1</sup> Alternatively,  $Q(t) = \int_t^{\infty} D(s) \exp[-\int_t^s r(s') ds'] ds$  where  $Q \equiv \exp(q)$  and  $D \equiv Qd$ .

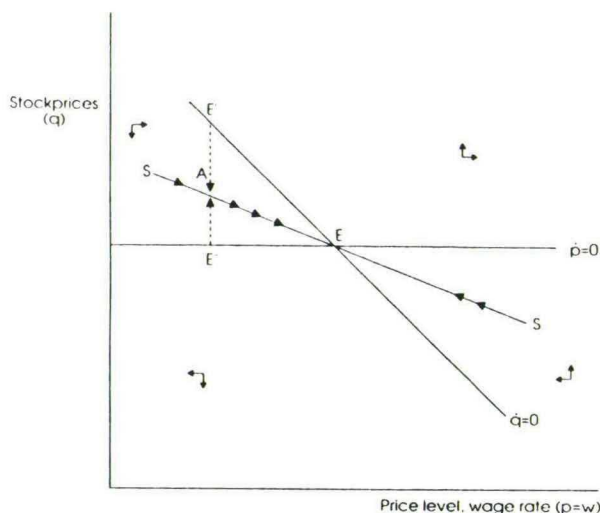


Fig. 1. Phase diagram for the stockmarket and the real economy.

where  $k' \equiv k\lambda - \phi$  is assumed to be positive.

### 3. Effects of an unanticipated fiscal and monetary expansion

The steady state of the system (7)–(11) is given by  $y(\infty) = \bar{y} = 0$ ,  $\dot{p}(\infty) = \dot{w}(\infty) = \dot{q}(\infty) = 0$ ,  $q(\infty) = -f/\alpha$ ,  $i(\infty) = r(\infty) = d(\infty) = \gamma f/\alpha$  and  $p(\infty) = m + (\gamma/\alpha\lambda)f$ . Hence, in the long run there is no inflation and output is at its natural rate. A fiscal expansion leads in the long run to a rise in prices, a rise in the interest rate and dividend ratio, and a fall in the stockmarket. A monetary expansion is super-neutral, i.e. has no effect on real outcomes in the long run, and leads to a one-for-one rise in the price level.

The transient dynamics associated with (10)–(11) corresponds to saddle-point behaviour, because the determinant of the associated Jacobian,  $-\phi\alpha\lambda$ , is negative and therefore there is an unstable eigenvalue associated with the forward-looking variable,  $q$ , and a stable eigenvalue, associated with the backward-looking variable,  $p = w$ . The phase diagram associated with (10)–(11) is presented in fig. 1 and confirms the saddlepoint property of this perfect-foresight system.

Consider an unanticipated, permanent fiscal expansion. In the long run this raises prices and lowers the value of the stockmarket, so that the steady state moves from  $E'$  to  $E$ . The expectation of falling prices and rising real interest rates leads to an immediate fall in the value of the stockmarket despite the rise in the dividend ratio. The associated fall in consumption and investment leads to partial crowding out of the fiscal expansion, so that

aggregate demand and employment rise on impact. Afterwards, the stockmarket continues to fall and prices state rising which choke off the initial increase in output. On impact the dividend ratio jumps up and afterwards continues to rise to its new equilibrium level. Since there are capital losses on the stockmarket, the real interest rate remains below the dividend ratio.

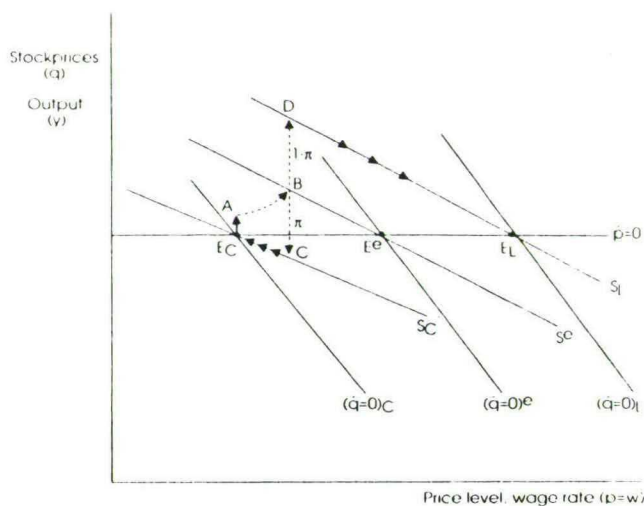
Now consider an unanticipated, permanent monetary expansion. In the long run this shifts the economy from  $E''$  to  $E$ , so that prices rise one-for-one whilst the stockmarket is unaffected. On impact the expectation of higher profits leads to an increase in the value of the stockmarket and an increase in output and employment. Afterwards, the rise in prices and decline in the value of the stockmarket choke off the initial gains in output until equilibrium is reached.

#### **4. Effects of uncertainty about election outcomes on the economy**

Assume that an incumbent Conservative administration at time 0 is facing an election in  $T$  periods where the rival Labour administration promises to engage in a monetary expansion, say  $m(t+T) = m_L > 0$ ,  $t \geq 0$  (see fig. 2). Let  $\pi$  be the probability that the Conservative party gets re-elected and  $1 - \pi$  be the probability that the Labour party gets into office. In that case the private sector anticipates a monetary expansion with expected value equal to  $0 < m^e \equiv (1 - \pi)m_L < m_L$ . On impact the economy moves from the Conservative steady state,  $E_c$ , to  $A$ , so that the value of the stockmarket, the interest rate, output, employment and inflation increase as soon as the private sector anticipates the probability of a Labour take-over. In the run-up to the election stockprices, output, employment and inflation continue to rise. The rise in prices reduces the interest rate whilst the rise in income increases the interest rate. On election eve the economy has moved to  $B$ ; the time it takes to traverse the distance from  $A$  to  $B$  is exactly equal to the length of the pre-election period. On election morning the votes are counted and the new government resumes office. If the Conservative government is re-elected, there is no change in monetary policy yet the stockmarket crashes instantaneously and output, employment and inflation fall immediately (move from  $B$  to  $C$ ). Afterwards, the increase in unemployment exerts a downward pressure on wages and prices. This boosts the real supply of money, reduces the interest rate and boosts profits, stockprices, output and employment until the Conservative equilibrium,  $E_c$ , is reached again. On the other hand if the Labour party secures the next term in office, there is a jump increase in the money supply as well as an instantaneous boom in the stockmarket, output and employment (move from  $B$  to  $D$ ). The subsequent increase in prices leads to falls in the interest rate and the stockmarket, which choke off output and employment.

The result that the stockmarket crashes (booms) when the Conservative





**Fig. 2. Uncertainty about a future monetary expansion.**

(Labour) party emerges as the victor is perhaps not what one would expect. However, most prospective Labour governments promise to deliver a fiscal rather than a monetary expansion (see fig. 3). As soon as the prospect of a future Labour government becomes a possibility, the stockmarket crashes and unemployment increases (move from  $E_e$  to  $A$ ). In the run-up to the election the stockmarket, output and employment continue to fall so that wages and prices fall (move from  $A$  to  $B$ ). Hence, an anticipated fiscal expansion causes unemployment in the interim period. On the morning after the election, the 'news' of the election outcome causes a discrete jump in the stockmarket. If the Conservative party is re-elected, there is no fiscal expansion, the stockmarket immediately booms and therefore there is an instantaneous recovery in output leading to employment (move from  $B$  to  $C$ ). As a result of the over-heating of the economy, prices and wages start rising. The subsequent falls in the stockmarket after the election choke off output and employment until the old equilibrium is reached (move from  $C$  to  $E_e$ ). On the other hand, if the Labour party is elected, there is a fiscal expansion and an immediate crash of the stockmarket (move from  $B$  to  $D$ ). Despite some crowding out of private investment and consumption, there is a recovery leading to over-employment so that prices and wages increase after the election. The continuing falls in the stockmarket choke off output and employment until the new equilibrium is reached (move from  $D$  to  $E_1$ ).

It is quite clear from these two examples that uncertainty about election outcomes can cause major swings in asset prices and therefore in the real

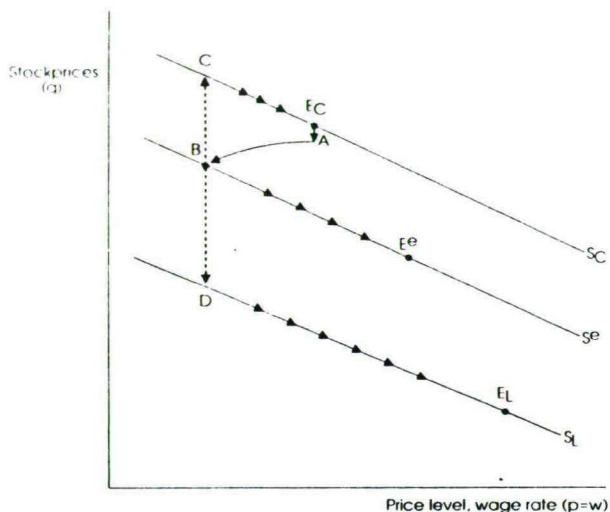


Fig. 3. Uncertainty about a future fiscal expansion.

economy. The jumps in the stockmarket depend of course on the anticipated probability of re-election,  $\pi$ . When this probability is high and the Conservative party is actually re-elected, the jump in the stockmarket on election morning is small as there is not much of a surprise. On the other hand, if the Labour party is elected, this is a big surprise and therefore there is a large jump in the stockmarket on election morning. Also, the effect on the pre-election outcomes is larger when the probability of re-election is lower.

## 5. Concluding remarks

A simple macroeconomic model with perfect foresight, an efficient stockmarket and sluggish labour markets has been formulated. In the long run a monetary expansion is neutral and has no real effects; it simply leads to a one-for-one increase in the price level. On impact the stockmarket rises, so that output and employment rise. Subsequently, the rise in prices and fall in the stockmarket choke off the initial gains in output until equilibrium is reached. A fiscal expansion does not affect output and employment in the long run, because it is completely crowded out by a fall in the stockmarket, an increase in prices and wages and an increase in interest rates. On impact the stockmarket falls and output rises. Subsequently, the rise in prices and continued fall in stockprices choke off the initial gains in output and employment.

When there is political uncertainty in the sense that an incumbent



Conservative party may be replaced by a Labour party at the next election, this will affect the pre-election outcomes and cause major swings in the stockmarket on election morning. When the prospective Labour government has a manifesto which promises a monetary expansion, the stockmarket, prices and output rise in the run-up to the election. If the Conservative (Labour) party gets elected, then the stockmarket crashes (booms) on election morning with a resulting fall (increase) in output and employment. Afterwards, prices and wages fall (increase) whilst output and employment increase (fall). When the prospective Labour administration has a manifesto which promises a fiscal expansion, there will be falls in the stockmarket and a recession in the run-up to the election. If the Conservative (Labour) party gets re-elected, then the stockmarket booms (crashes) on election morning. In both cases output and employment increase.

Future research may be concerned with the effects of these political-economic swings in the stockmarket and the real economy on the policies of the incumbent government and on the manifesto of the opposition parties. For example, when there is a threat of a new Labour government which promises a fiscal expansion, then in the light of the recession in the run-up to the election an incumbent Conservative administration may engage in laxer fiscal policy than in the absence of such a threat. In other words, the ideology of the incumbent government may be 'coloured' by the ideology of a rival opposition party. A related area of research is to investigate the policies and reputations of rival parties as a repeated game [as is done in Alesina (1987)]. Alternatively, one could allow for political business cycles driven by temporary informational asymmetries where one finds that incumbent parties cheat least when either private information is extremely favourable or extremely unfavourable (Rogoff, 1988). Finally, an important area of future research is the political economy associated with the international coordination of economic policies. For example, international policy coordination may be counter-productive as the domestic political-economic distortion in budget deficits is increased under international policy coordination (Tabellini, 1988).

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